

#### ABSTRACT OF THE DISCLOSURE

A corneal surgery apparatus capable of accurately obtaining torsion information on an eyeball or positional information on an eye even during laser irradiation or after a cornea is incised into a layer, and of accurately performing corneal surgery with a laser beam. The apparatus, for ablating a cornea of a patient's eye by irradiation of a laser beam, includes an irradiation optical system for irradiating the laser beam onto the cornea, an image-pickup device for picking up an image of an anterior-segment of the eye, a mark detection device for processing the obtained image of the anterior-segment and detecting a mark provided to the eye, a reference position setting device for setting a reference position in which the mark being detected is to be positioned, and a torsion detection device for obtaining torsion information on the eye based on the detected mark and the set reference position.